

CLAIMS

What is claimed is:

1. A portable air filtration system for filtering air, said filtration system
5 comprising:
 - a filter housing including an air inlet and an air outlet and defining a filtration chamber between said air inlet and said air outlet;
 - an intake fan disposed within said filter housing for moving the air through said filtration chamber by drawing the air in through said air inlet and dispelling the air out
10 through said air outlet;
 - an ionizing mechanism disposed between said intake fan and said air outlet for ionizing particles within the air to a negative charge;
 - a filter media having an upstream side facing said air inlet and a downstream side facing said air outlet wherein said filter media is disposed between said ionizing
15 mechanism and said air outlet for entrapping the particles between said upstream side and said downstream side;
 - a conductive coating applied to said upstream side of said filter media to establish an electric field between said ionizing mechanism and said conductive coating, wherein said upstream side of said filter media is electrically-connected to ground through said
20 conductive coating for dissipating the negative charge of the particles entrapped within said filter media.
2. An air filtration system as set forth in claim 1 wherein said filter media is further defined as an electret filter media.
3. An air filtration system as set forth in claim 1 wherein said filter media is
25 further defined as a non-woven filter media.
4. An air filtration system as set forth in claim 3 wherein said non-woven filter media is further defined as a honeycomb filter media having a plurality of substantially hexagonal edges defining individual cells.
5. An air filtration system as set forth in claim 4 wherein said conductive
30 coating is applied to said substantially hexagonal edges at said upstream side of said honeycomb filter media.

6. An air filtration system as set forth in claim 1 wherein said filter media is pleated.
7. An air filtration system as set forth in claim 1 wherein said filter media is non-pleated.
- 5 8. An air filtration system as set forth in claim 1 wherein said conductive coating is selected from the group consisting of conductive paint, conductive ink, conductive adhesive, and combinations thereof.
9. An air filtration system as set forth in claim 1 wherein said conductive coating is applied to said upstream side of said filter media in a continuous pattern of
10 said conductive coating.
10. An air filtration system as set forth in claim 9 wherein said continuous pattern of said conductive coating is further defined as a parallel pattern of said conductive coating.
11. An air filtration system as set forth in claim 9 wherein said continuous
15 pattern of said conductive coating is further defined as a perpendicular pattern of said conductive coating.
12. An air filtration system as set forth in claim 9 wherein said continuous pattern of said conductive coating is further defined as a web pattern of said conductive coating.
- 20 13. An air filtration system as set forth in claim 1 wherein said conductive coating is applied to said upstream side of said filter media via lamination.
14. An air filtration system as set forth in claim 1 wherein said conductive coating is applied to said upstream side of said filter media via rolling.
15. An air filtration system as set forth in claim 1 wherein said conductive
25 coating is applied to said upstream side of said filter media via spraying.
16. An air filtration system as set forth in claim 1 wherein said filter media comprises corrugated filter material interleaved between flat sheets.

17. A filter for use in an air filtration system to filter particles in air, said filter comprising:
- a filter media for entrapping the particles in the air; and
 - a conductive coating applied to said filter media for dissipating a charge of the particles entrapped within said filter media.
18. A filter as set forth in claim 17 wherein said filter media is further defined as an electret filter media.
19. A filter as set forth in claim 17 wherein said filter media is further defined as a non-woven filter media.
20. A filter as set forth in claim 19 wherein said non-woven filter media is further defined as a honeycomb filter media having a plurality of substantially hexagonal edges defining individual cells.
21. A filter as set forth in claim 20 wherein said conductive coating is applied to said substantially hexagonal edges.
22. A filter as set forth in claim 17 wherein said filter media is pleated.
23. A filter as set forth in claim 17 wherein said filter media is non-pleated.
24. A filter as set forth in claim 17 wherein said conductive coating is selected from the group consisting of conductive paint, conductive ink, conductive adhesive, and combinations thereof.
25. A filter as set forth in claim 17 wherein said conductive coating is applied to said filter media in a continuous pattern of said conductive coating.
26. A filter as set forth in claim 25 wherein said continuous pattern of said conductive coating is further defined as a parallel pattern of said conductive coating.
27. A filter as set forth in claim 25 wherein said continuous pattern of said conductive coating is further defined as a perpendicular pattern of said conductive coating.
28. A filter as set forth in claim 25 wherein said continuous pattern of said conductive coating is further defined as a web pattern of said conductive coating.
29. A filter as set forth in claim 25 wherein said continuous pattern of said conductive coating includes a plurality of strands of said conductive coating with each of said strands being spaced from 3 to 20 millimeters from an adjacent strand.

30. A filter as set forth in claim 17 wherein said conductive coating is applied to said filter media via lamination.
31. A filter as set forth in claim 17 wherein said conductive coating is applied to said filter media via rolling.
- 5 32. A filter as set forth in claim 17 wherein said conductive coating is applied to said filter media via spraying.
33. A filter as set forth in claim 17 wherein said filter media comprises corrugated filter material interleaved between flat sheets.